



APPLICATIONS OF HIGH RESOLUTION SATELLITE IMAGERY FOR MINNEHAHA COUNTY, SD

PRESENTED BY:

BRAD RUPERT

GIS COORDINATOR

MINNEHAHA COUNTY

PLANNING DEPARTMENT

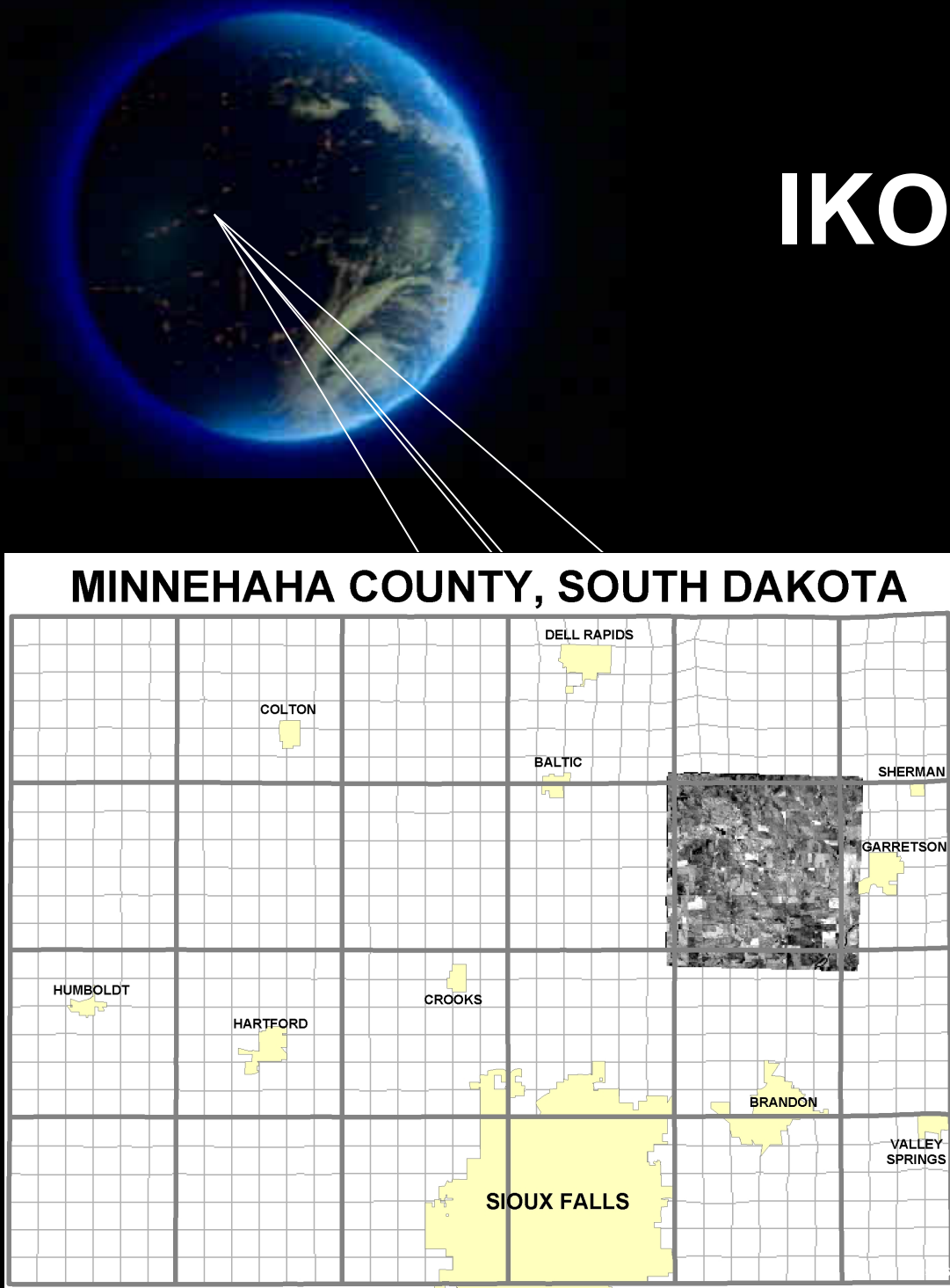




MINNEHAHA COUNTY

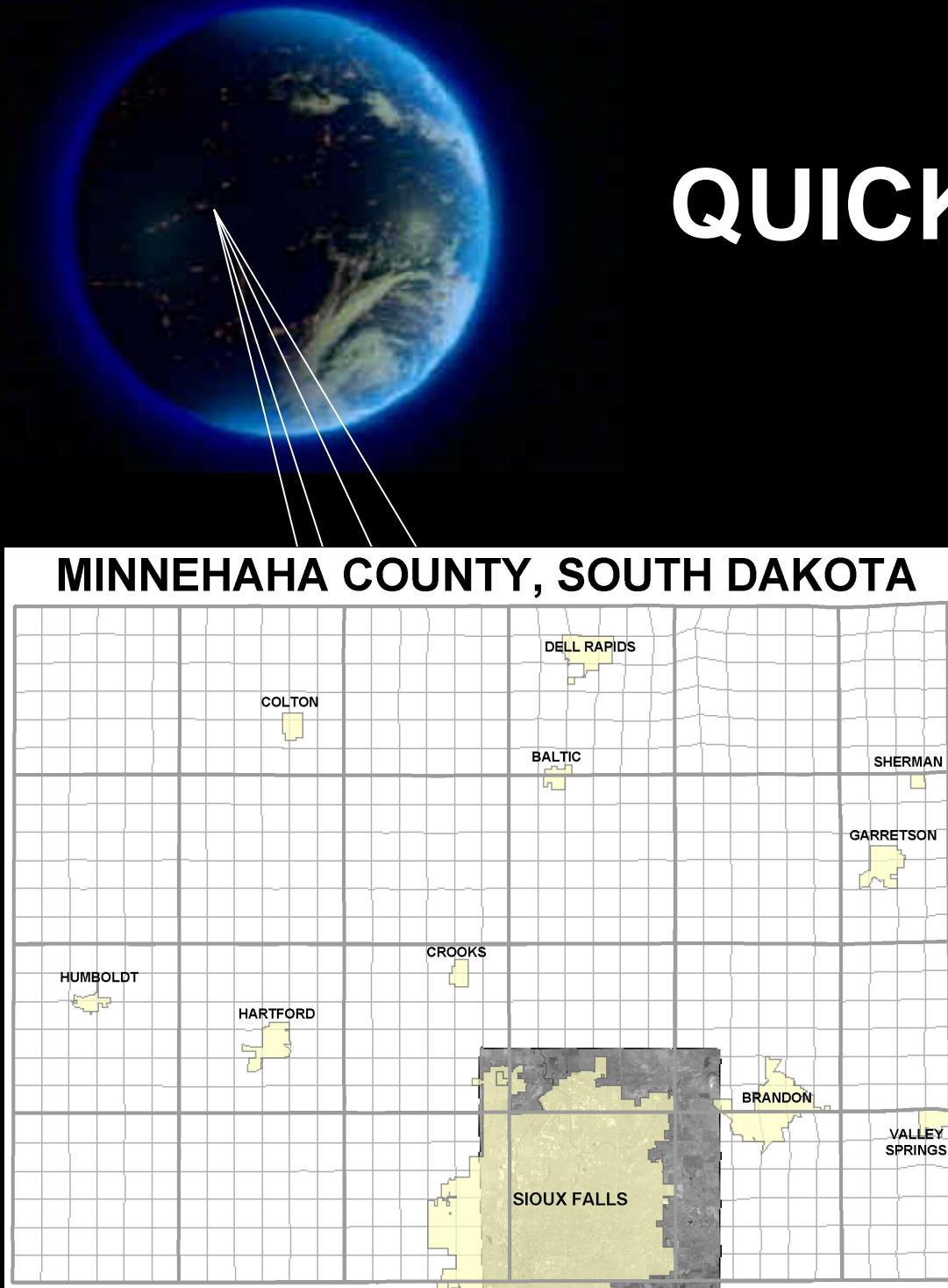
- MINNEHAHA COUNTY ENCOMPASSES 813 SQUARE MILES AND IS THE LARGEST COUNTY IN SOUTH DAKOTA IN TERMS OF POPULATION WITH A 2003 ESTIMATE OF 157,700 PEOPLE
- STARTED GIS DEVELOPMENT IN 1990
- 1992 MINNEHAHA COUNTY PROPERTY BASE COMPLETED

IKONOS IMAGERY



- ACQUIRED PANCHROMATIC AND MULTISPECTRAL IKONOS SATELLITE IMAGERY COVERING EDISON TOWNSHIP IN MINNEHAHA COUNTY

QUICKBIRD IMAGERY



- ACQUIRED PANCHROMATIC AND MULTISPECTRAL QUICKBIRD SATELLITE IMAGERY COVERING A PORTION OF SIOUX FALLS AND SURROUNDING AREA



GOALS

- DETERMINE WHAT DEPARTMENTS WOULD FIND THESE PRODUCTS USEFUL AND FOR WHAT APPLICATIONS THEY WOULD USE THEM.
- DETERMINE IF IT IS FEASIBLE FOR MINNEHAHA COUNTY TO PURCHASE SATELLITE IMAGERY.



PLANNING & ZONING APPLICATIONS

- GROWTH AREAS
 - LAND USE
 - GIS MAINTENANCE

1981 SCANNED MYLAR AERIAL



1:7,800

1991 DOQQ



1:7,800

1996 SCANNED AERIAL



2002 QUICKBIRD IMAGE





PLANNING & ZONING APPLICATIONS

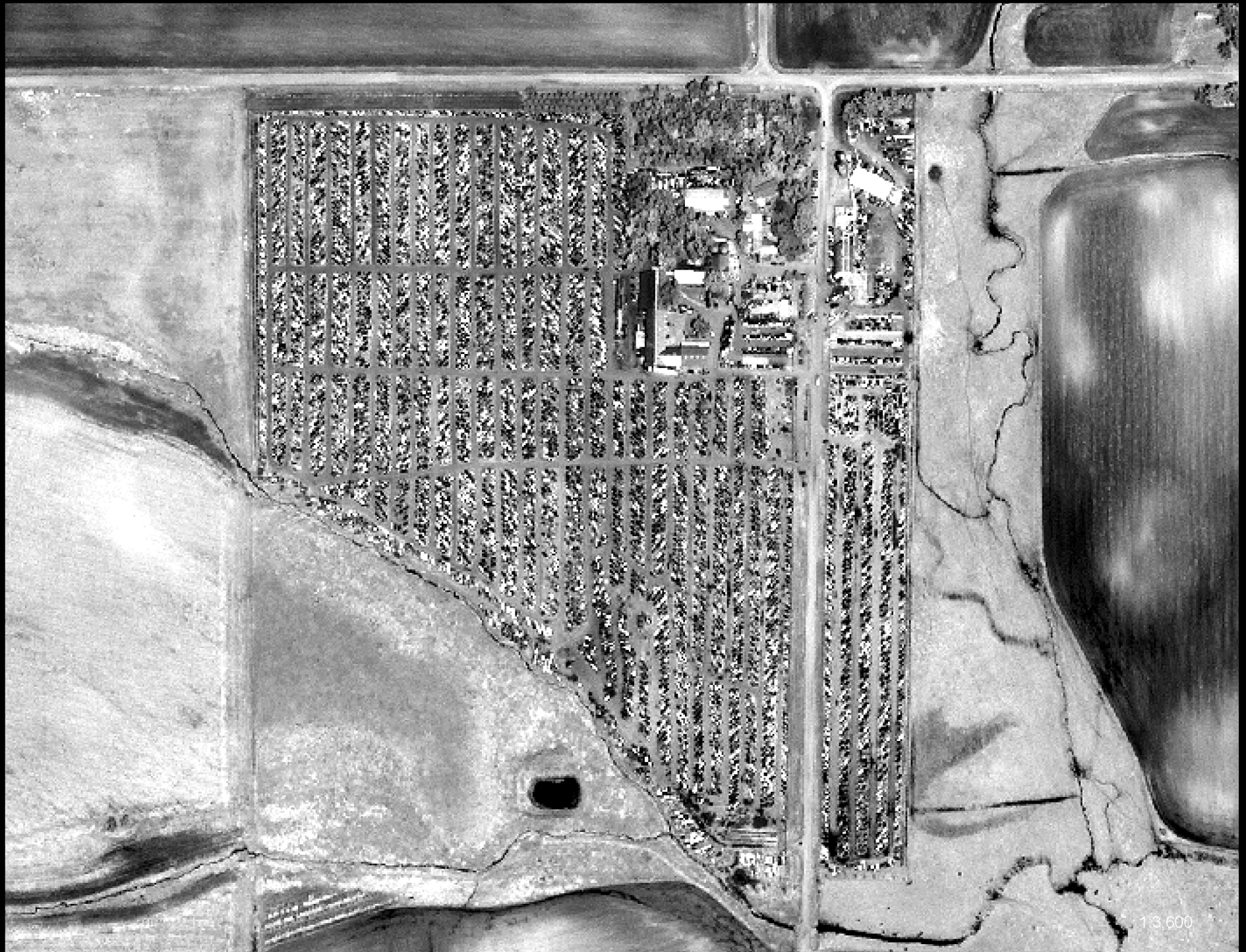
- GROWTH AREAS
 - LAND USE
 - GIS MAINTENANCE
- ZONING COMPLIANCE

1991 DOQQ

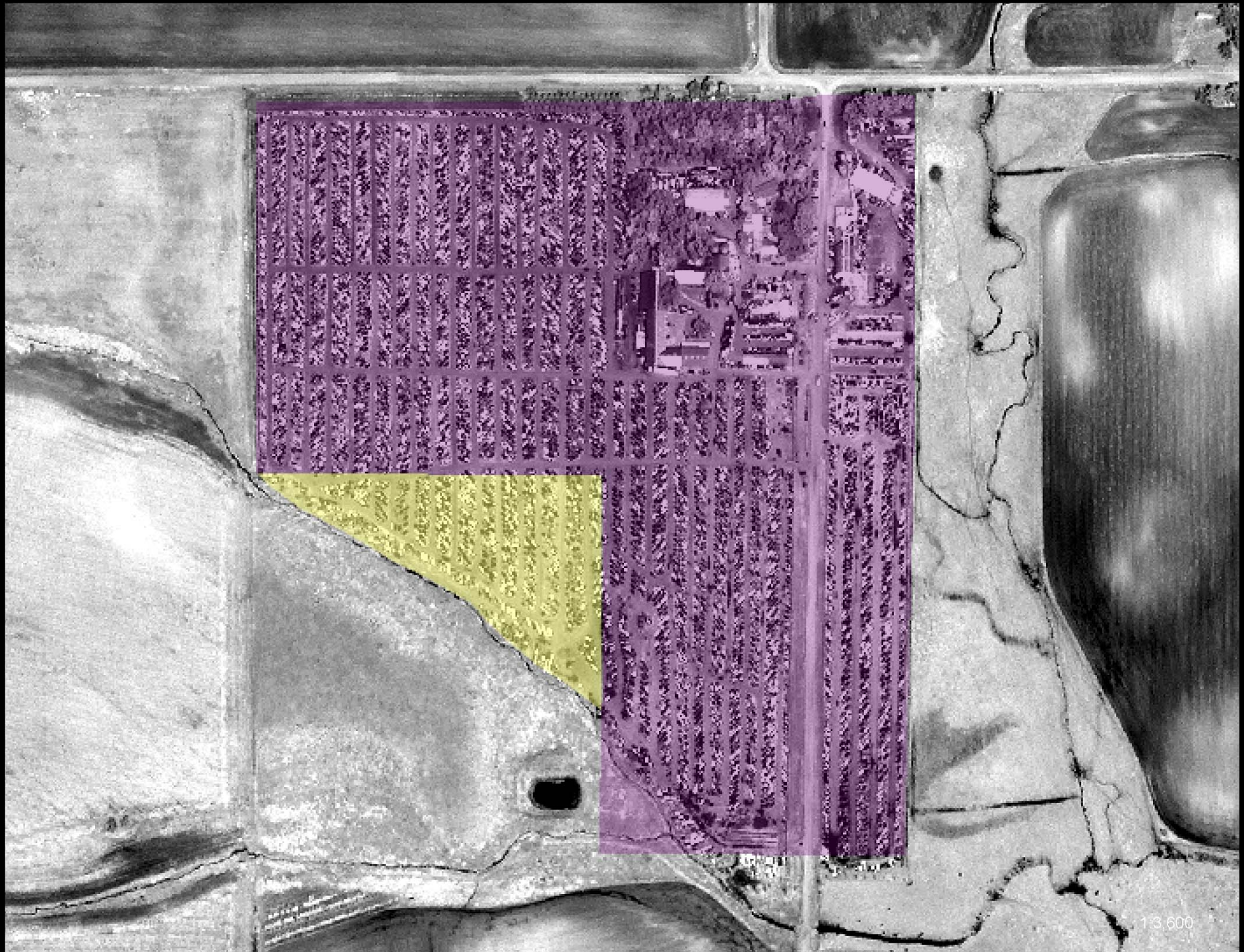


1:3,600

2002 IKONOS



2002 IKONOS WITH ZONING OVERLAY





PLANNING & ZONING APPLICATIONS

- GROWTH AREAS
 - LAND USE
 - GIS MAINTENANCE
- ZONING COMPLIANCE
- RURAL ADDRESSING

RURAL ADDRESSING & DRIVEWAY LOCATION

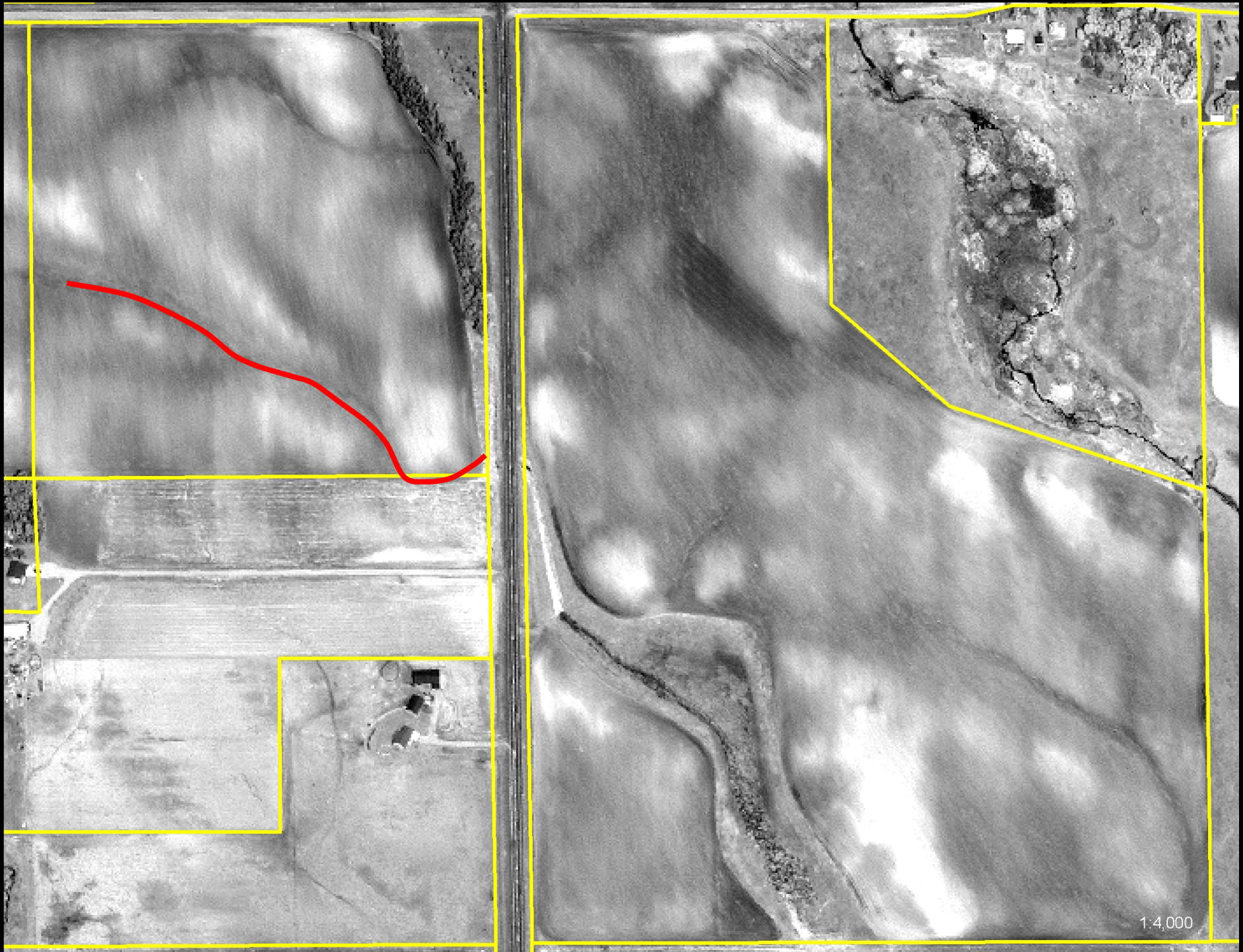




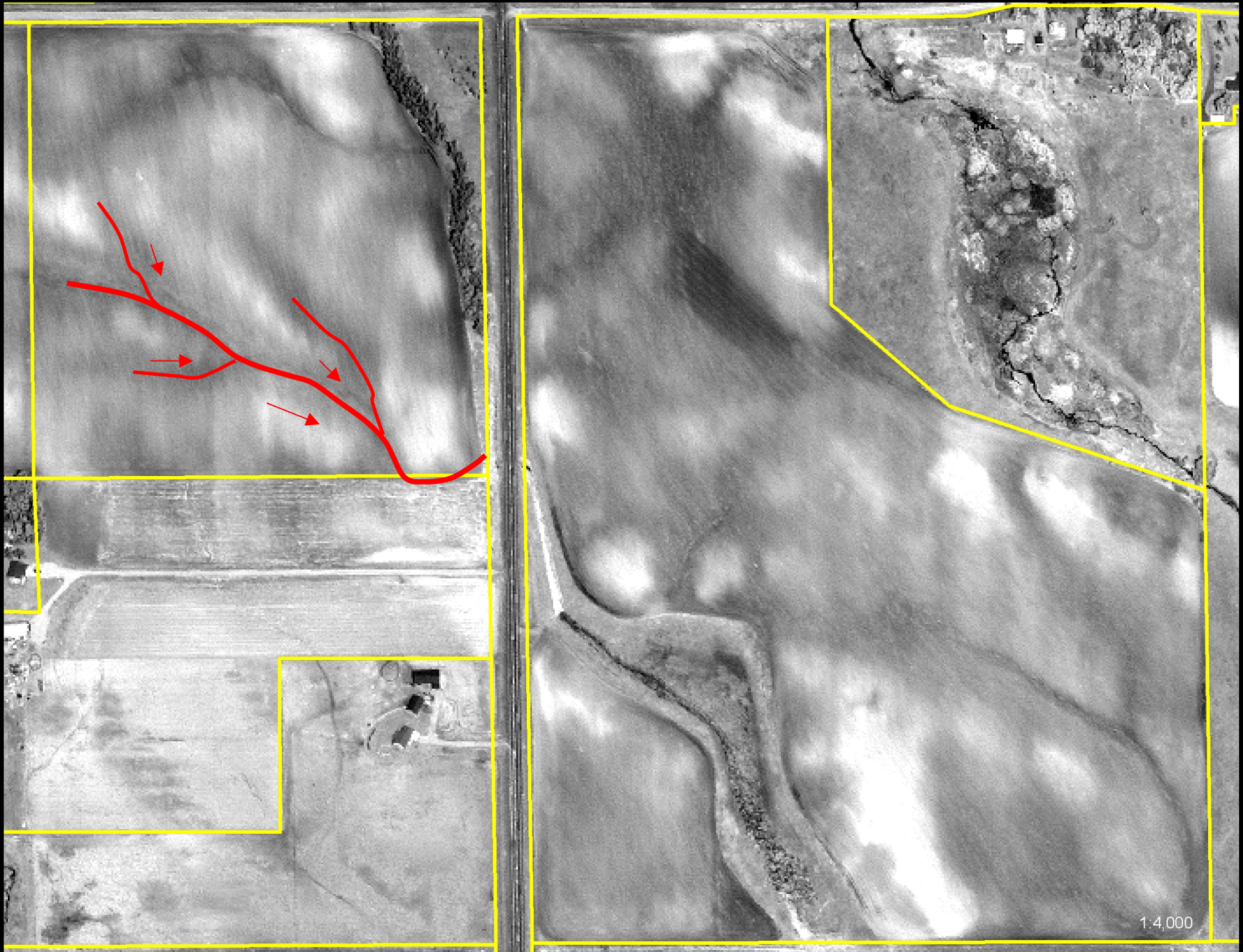
PLANNING & ZONING APPLICATIONS


- GROWTH AREAS
 - LAND USE
 - GIS MAINTENANCE
- ZONING COMPLIANCE
- RURAL ADDRESSING
- AGRICULTURAL DRAINAGE PERMITS

AGRICULTURAL DRAINAGE ISSUES



AGRICULTURAL DRAINAGE ISSUES

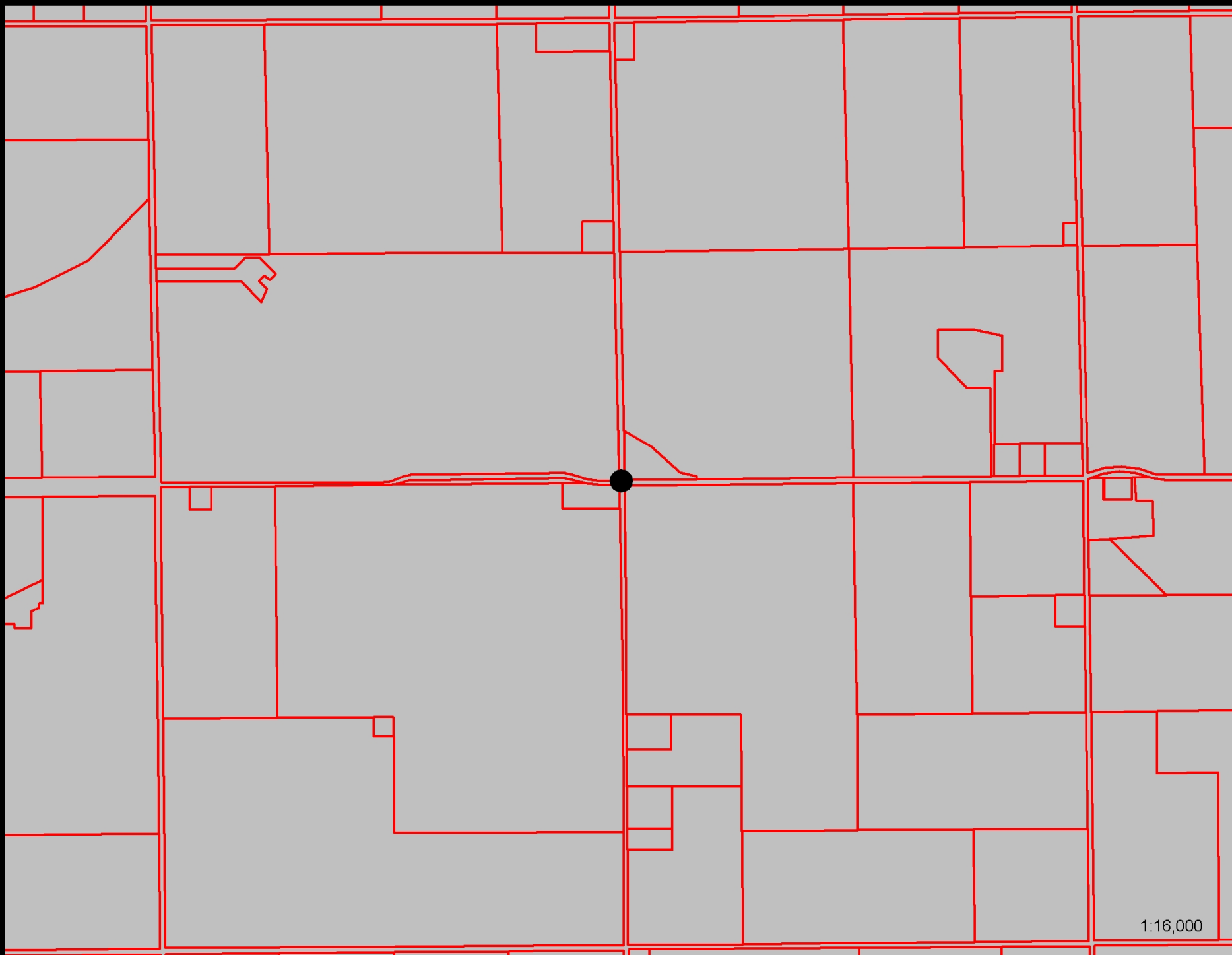




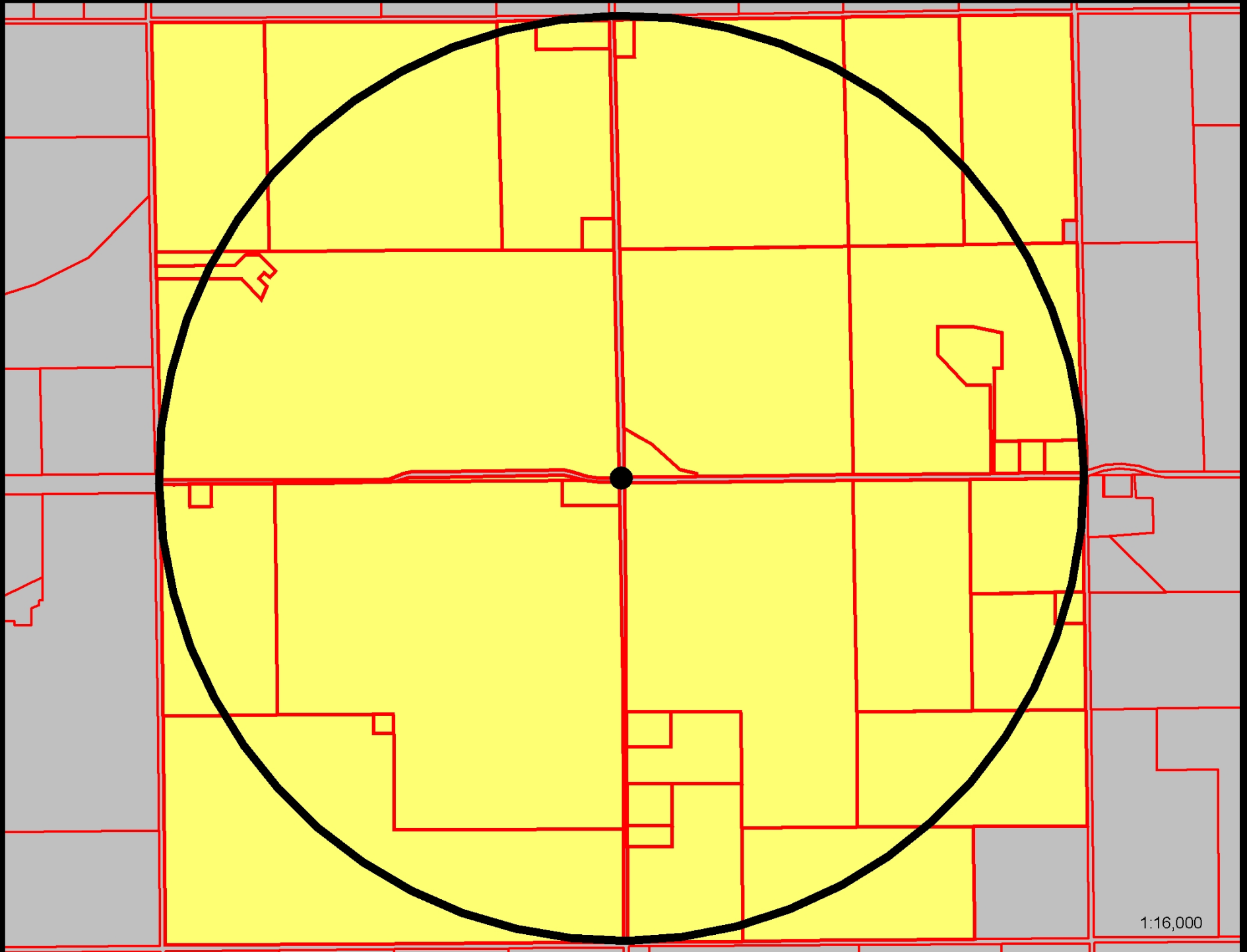
EMERGENCY MANAGEMENT APPLICATIONS

- PROPERTY ASSESSMENT AFTER NATURAL DISASTER
- ABILITY TO CREATE OWN LAYERS/STRUCTURE INVENTORY
- TRACKING GRASS FIRES/HAZARDOUS SPILLS

HAZARDOUS SPILL



HAZARDOUS SPILL



HAZARDOUS SPILL

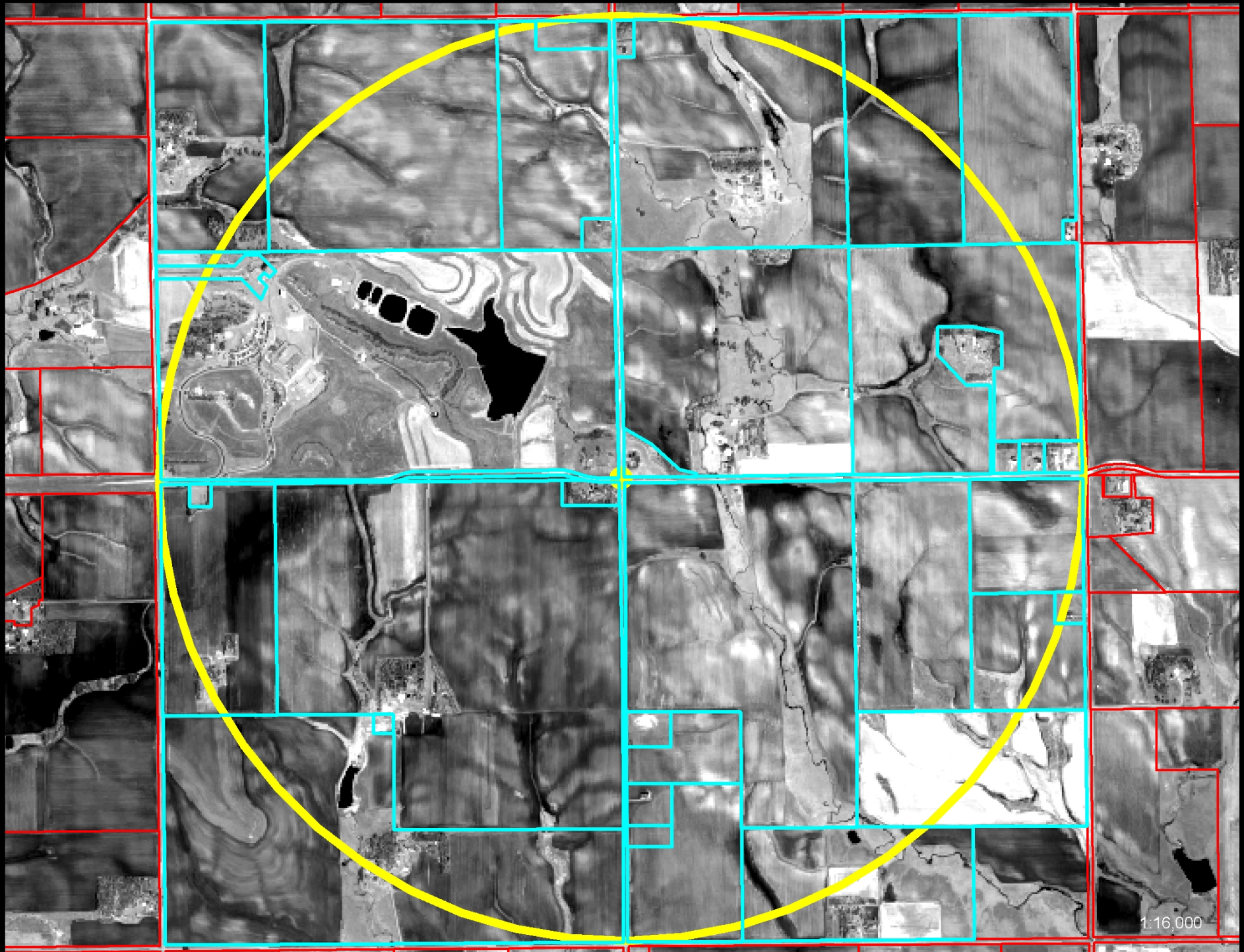
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CITY	MRRDID	MRZON1	MRDES1	MRRALAC	MRNLAC	MRSCHD	MRTNM1	ADDRESS
	16728	A1	E1/2 NE1/4 (EX E 10 RDS S 16 RDS) 9 10	79	0	GARRETSON	BAKER, CYNTHIA EVENSON & PAUL ALL	
	16730	A1	W1/2 NE1/4 9 103 48	80	0	GARRETSON	RAINES, THOMAS L	
	16731	A1	NW1/4 (EX TR 1 ANDERSON'S ADDN) 9 1	157.31	0	GARRETSON	ANDERSON, MARIAN L	25126 480 AVE
	59408	A1	TRACT 1 ANDERSON'S ADDN NW/14 9 10	0	2.69	GARRETSON	ANDERSON, DENNIS U & GAIL J	25106 480 AVE
	408750		N350° E871.2' E1/2 NE1/4 8-103-48	0	7			
	408749		E1/2 NE1/4 (EX E361.5' S361.5' & EX N350°	70	0			
	16726	A1	W1/2 NE1/4 & E1/2 NW1/4 8 103 48	160	0	GARRETSON	LUNSTRA, ROGER W & JOYCE M	
	16725	A1	W1/2 NW1/4 8 103 48	80	0	GARRETSON	HEGGE, ELMER & JANET	25124 479 AVE
	70975		E361.5 S361.5 E1/2 NE1/4 8 103 48	0	3	GARRETSON	SCARAMUZZA, PAT	25145 480 AVE
	16734	A1	SE1/4 (EX ZWEEPS ADDN) 9 103 48	140.37	0	GARRETSON	ZWEEP, DONALD TRUSTEE	
	16732		SW1/4 (EX TR 1 LARSON'S ADDN) 9 103 4	153.36	0	GARRETSON	LARSON, BARBARA E LIVING TRUST BY	48026 252 ST
	16724	I2	EROS DATA CENTER TRS 1 & 2 /EX TRS	0	0	GARRETSON	UNITED STATES GEOLOGICAL SURVEY;	47914 252 ST
	16723	I2	TRS 1A & 1B OF TR 1 EROS DATA CENTE	0	0	GARRETSON	UNITED STATES OF AMERICA	
	59136	A1	TRACT 1 ZWEEPS ADDN SE1/4 9 103 48	0	10.23	GARRETSON	HARRIS, CHAD D & JENNIFER M	48080 252 ST
	70976	A-1	TRACT 1 LARSON'S ADDITION W1/2 SW1	0	6.64	GARRETSON	OLMSTEAD, WADE P & ILENE R	25194 480 AVE
	64032	A1	TRACT 4 ZWEEP'S ADDN SE1/4 9 103 48	0	4.21	GARRETSON	WALTZ, WILLIAM F & JULIE S	48094 252 ST
	64031		TRACT 3 ZWEEP'S ADDN SE1/4 9 103 48	0	2.6	GARRETSON	CARSTENS, ALFRED & CHERYL	48088 252 ST
	64030	A1	TRACT 2 ZWEEP'S ADDN SE1/4 9 103 48	0	2.6	GARRETSON	LONGHENRY, SCOTT R & NANCY J	48082 252 ST
	16773	A1	NE1/4 NE1/4 16 103 48	40	0	GARRETSON	ELLEFSON, CAROL JEAN	
	16775	A1	W1/2 NE1/4 16 103 48	80	0	GARRETSON	BERDAL, HAROLD & SISSEL	
	16727	A1	W 118.5 RDS OF S 6 RDS SE1/4 8 103 48	4.44	0	GARRETSON	FIEGEN, CLARENCE L & PHYLLIS J	
	16776	A1	NW1/4 & NE1/4 SW1/4 16 103 48	200	0	GARRETSON	REYNOLDS, JANICE ETAL C/O GALE P L	
	16782	A1	E 41.5 RDS OF N 17 RDS NE1/4 17 103 48	0	4.4	GARRETSON	FIEGEN, TAD L & BRENDA L	47993 252 ST
	16781	A1	NE1/4 EX 41.5 RDS OF N 17 RDS & N 1/2	315.6	0	GARRETSON	FIEGEN, CLARENCE L & PHYLLIS J	47959 252 ST
	16783	A1	W1/2 NW1/4 (EX 1 A CEM) 17 103 48	79	0	GARRETSON	HERMANSON, ROBIN G & CAROL J	
	16784	A1	NW CORNER 17 103 48	0	0	GARRETSON	ST PAUL CEMETERY C/O KENT HEGGE	
	69347		N361.5 E361.5 SE1/4 NE1/4 16 103 48	0	3	GARRETSON	BURKETT, D EVAN & LYNDA K	25229 481 AVE
	16774		SE1/4 NE1/4 (EX N361.5 E361.5) 16 103 48	37	0	GARRETSON	SCHREURS, DUANE L & SHIRLEY M	
	16780	A1	N1/2 SE1/4 16 103 48	80	0	GARRETSON	ORMSETH, E O & ESTHER SCHUETTS	
	75318		N821.5 W1/2 SW1/4 (EX N400 W544) 16 1	0	19.89	GARRETSON	SCHREURS, DUANE L & SHIRLEY M C/O	
	73033		N400° W544° W1/2 SW1/4 16-103-48	0	5	GARRETSON	NELSON, MATT L & DEBRA K	25252 480 AVE
	16786	A1	1 A IN NE1/4 SW1/4 17 103 48	1	0	GARRETSON	FIEGEN, CLARENCE L	
	16785	A1	SW 1/4 (EX 1A) & S 1/2 SE 1/4 17 103 48	239	0	GARRETSON	HERMANSON, ROBIN G & CAROL J	47952 253 ST
	16777		W1/2 SW1/4 (EX N821.5 & EX TRS 1 & 2 L	46.11	0	GARRETSON	LUNSTRA, ROGER W & JOYCE M	
	73530		TR 1 LUNSTRA'S ADDN W1/2 SW1/4 16 1	0	6	GARRETSON	CHRISTOPHERSON, REID A & RUTH A	25270 480 AVE
	16778	A1	SE1/4 SW1/4 & SW1/4 SE1/4 16 103 48	80	0	GARRETSON	DOCKEN, WANETA	48050 253 ST
	74911		TRACT 2 LUNSTRA'S ADDITION W1/2 SW	0	3	GARRETSON	HILDRING, THOMAS E	25280 480 AVE

Record: 1 Show: All Selected Records (37 out of 37 Selected.)

Options

HAZARDOUS SPILL





EQUALIZATION (ASSESSORS) APPLICATIONS

- ASSESSING RAW LAND VALUES

ASSESSING RAW LAND VALUE





EQUALIZATION (ASSESSORS) APPLICATIONS

- ASSESSING RAW LAND VALUES
- ADDITIONAL TOOL FOR BUILDING ASSESSMENTS

BUILDING ASSESSMENT

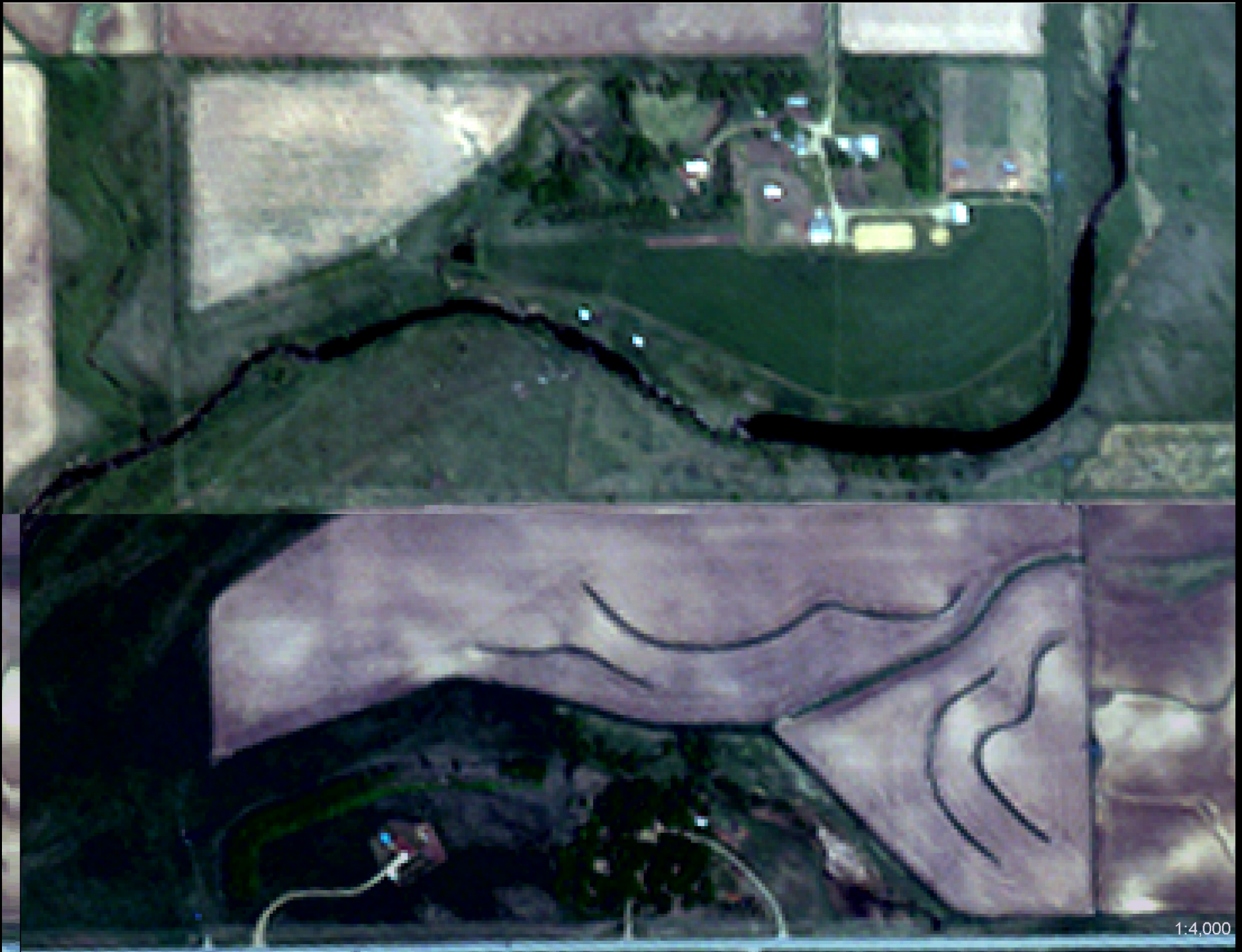


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BUILDING ASSESSMENT



BUILDING ASSESSMENT





EQUALIZATION (ASSESSORS) APPLICATIONS

- ASSESSING RAW LAND VALUES
- ADDITIONAL TOOL FOR BUILDING ASSESSMENTS
- DETERMINING FARMABILITY

FARMABILITY ISSUES





EQUALIZATION (ASSESSORS) APPLICATIONS

- ASSESSING RAW LAND VALUES
- ADDITIONAL TOOL FOR BUILDING ASSESSMENTS
- DETERMINING FARMABILITY
- PROVIDES A TOOL WHEN WORKING WITH THE PUBLIC



PUBLIC USE

- COMMUNICATION WITH THE PUBLIC
 - IN OFFICE VIA HARD COPY MAPS OR INTRANET
 - OUT OF OFFICE WITH INTERNET

MINNEHAHA COUNTY GIS

Active Theme:

Tools:

[Help ?](#)



Layers

- Visible Active
- ☒ ☐ Parcel Labels
 - ☒ ☐ Interstate Labels
 - ☒ ☐ Major Roads
 - ☒ ☐ Interstate System
 - ☒ ☐ SF Streets
 - ☐ ☐ Section Lines
 - ☒ ☐ River|Stream
 - ☒ ☐ Major Waterway Labels
 - ☐ ☐ Body of Water
 - ☒ ☐ Major Lakes Labels
 - ☒ ☐ Parcel Boundaries
 - ☒ ☒ Parcels
 - ☒ ☐ Sioux Falls City Limits
 - ☒ ☐ Municipality Boundary
 - ☐ ☐ MC Zoning
 - ☒ ☐ Aerial Photo

Refresh Map



Pan



PUBLIC USE

- COMMUNICATION WITH THE PUBLIC
 - IN OFFICE VIA HARD COPY MAPS OR INTRANET
 - OUT OF OFFICE WITH INTERNET
- COMMISSION MEETINGS



POLICE / FIRE DISPATCH APPLICATIONS

- ADDITIONAL LAYER IN CAD SYSTEM
 - ENHANCED 911
- ADDITIONAL INFORMATION FOR OFFICER
 - METHAMPHETAMINE LABS



Cost Comparisons

- Cost to image entire county ranges from:
 - \$31,000 to \$63,000 for newly collected satellite imagery
 - \$14,000 - \$50,000 for archived (previously collected) imagery
 - \$65,000 - \$91,000 for aerial photo (1ft and 6 in. resolution respectively)
- Satellite imagery compares favorably in cost to aerial imagery

* Prices obtained from online sources in Spring 2003. Prices are update often and vary widely depending on product & performance. For more accurate prices please consult the vendors.



CONCLUSION

- SEVERAL DEPARTMENTS WOULD BENEFIT FROM THE ACQUISITION OF CURRENT HIGH RESOLUTION SATELLITE IMAGERY
 - PLANNING & ZONING
 - EMERGENCY MANAGEMENT
 - EQUALIZATION
 - POLICE/FIRE DISPATCH
 - PUBLIC USE



CONCLUSION

- IS IT FEASIBLE FOR MINNEHAHA COUNTY TO PURCHASE SATELLITE IMAGERY?



QUESTIONS?



THANK YOU !